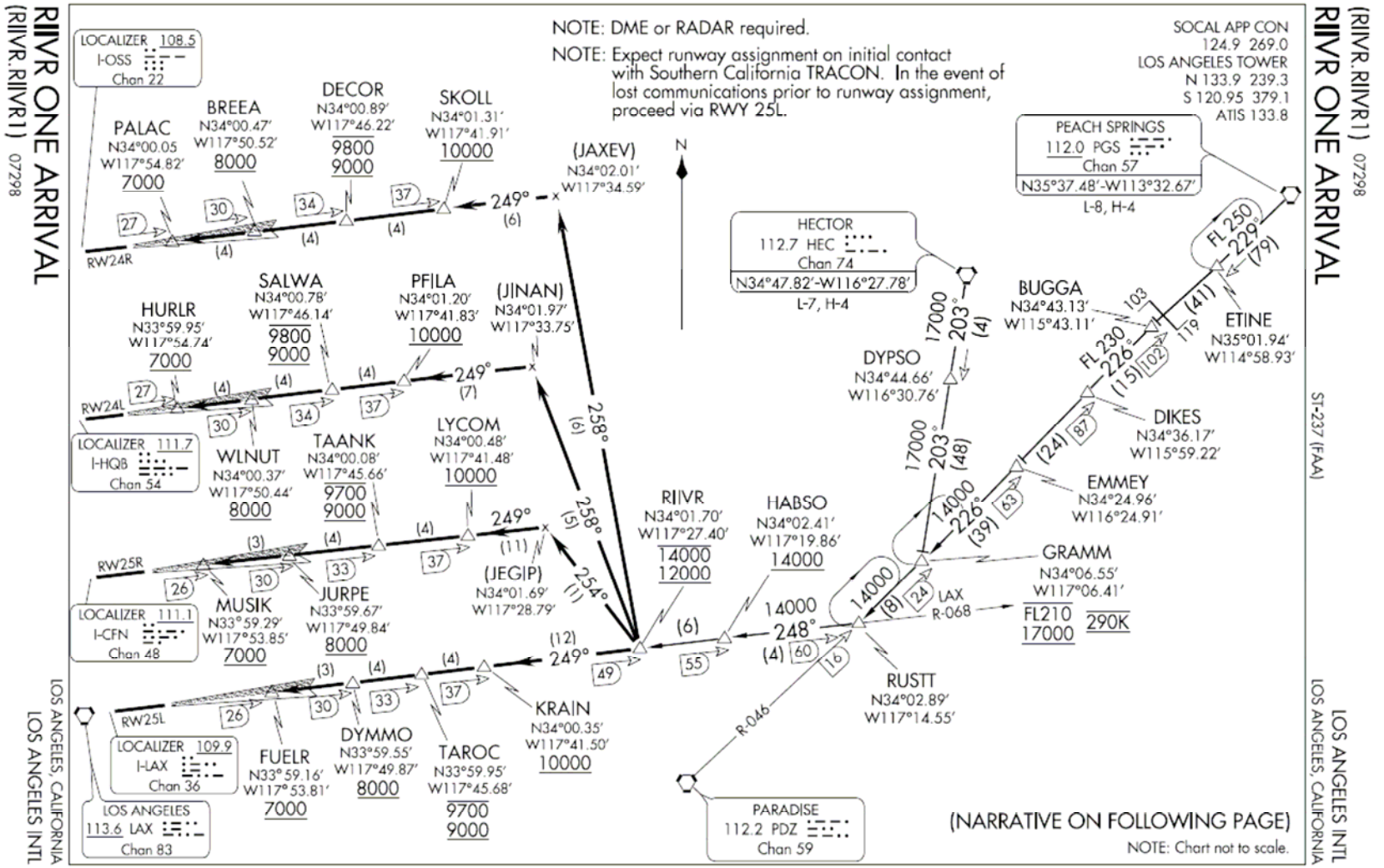
Atlantic Interoperability Initiative to Reduce Emissions (AIRE)

ATL and MIA CDA Status Update

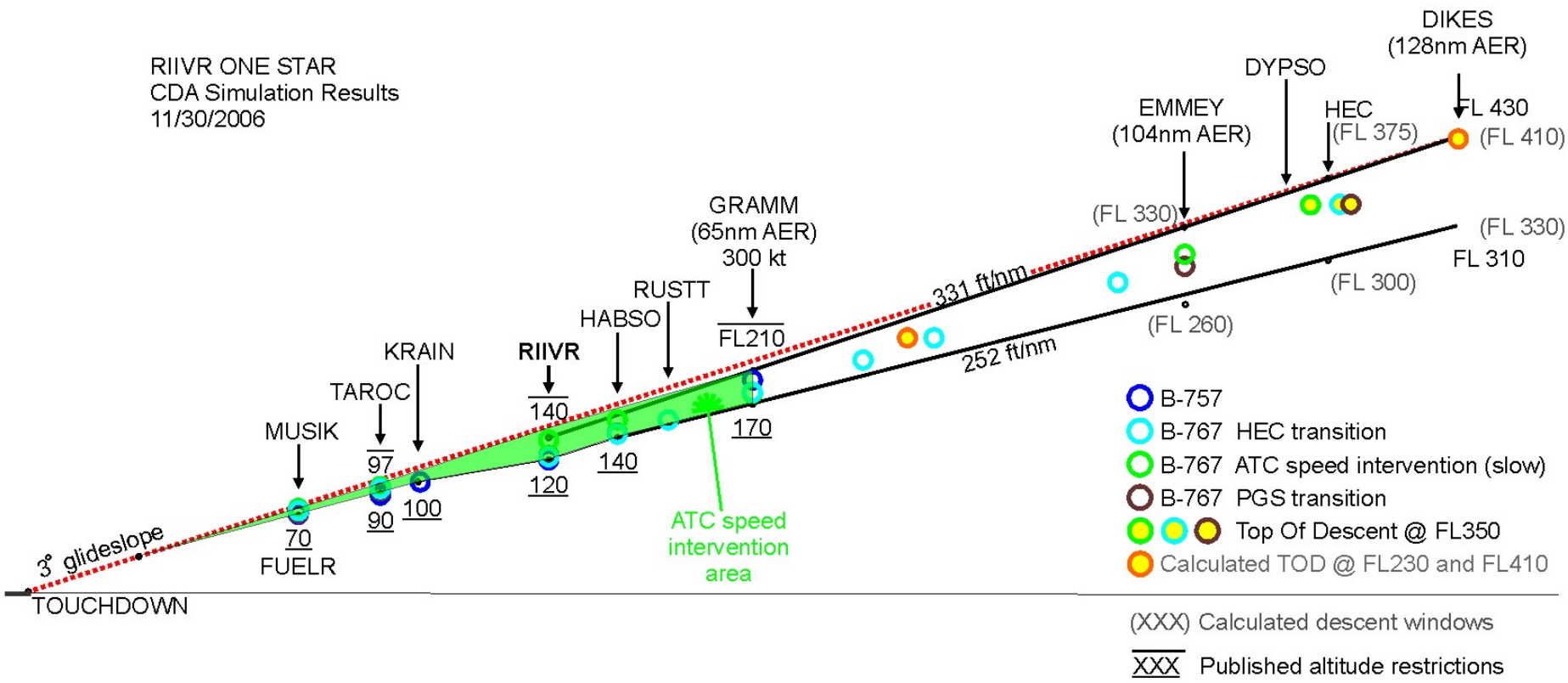
Presented to: E Operations Workshop

Date: December 5, 2007

LAX RIIVR STAR CDA Example



Descent Optimized for a Variety of Aircraft



AIRE Continuous Descent Arrival (CDA) Plan

- **Evaluate the operational feasibility and benefits of Continuous Descent Arrivals (CDA)**
  - Methodology to assess key metrics for the implementation of CDAs
    - Establish pre-demonstration baseline to measure key metrics in current operational environment
    - Define and chart optimal vertical paths for aircraft and airspace efficiencies
    - Determine expected level of benefit via modeling and simulation
    - Establish data collection and analysis plan; and
    - Perform post-demonstration operational evaluation to validate savings of emissions, fuel, time and noise

AIRE CDA Plan con't

- **Develop and refine tools, knowledge, and best practices relating to CDA procedure integration into the NAS and CDA usage during various traffic conditions.**
  - Use existing procedure development 18-Step Process
  - Provide and refine procedure development expertise and capture lessons learned
  - Assess airspace and traffic flow impact of design and implementation of CDA procedures
  - Enhance controller familiarity with CDA operations through human-in-the-loop simulations
  - Develop a deeper understanding of the key factors affecting aircraft vertical performance

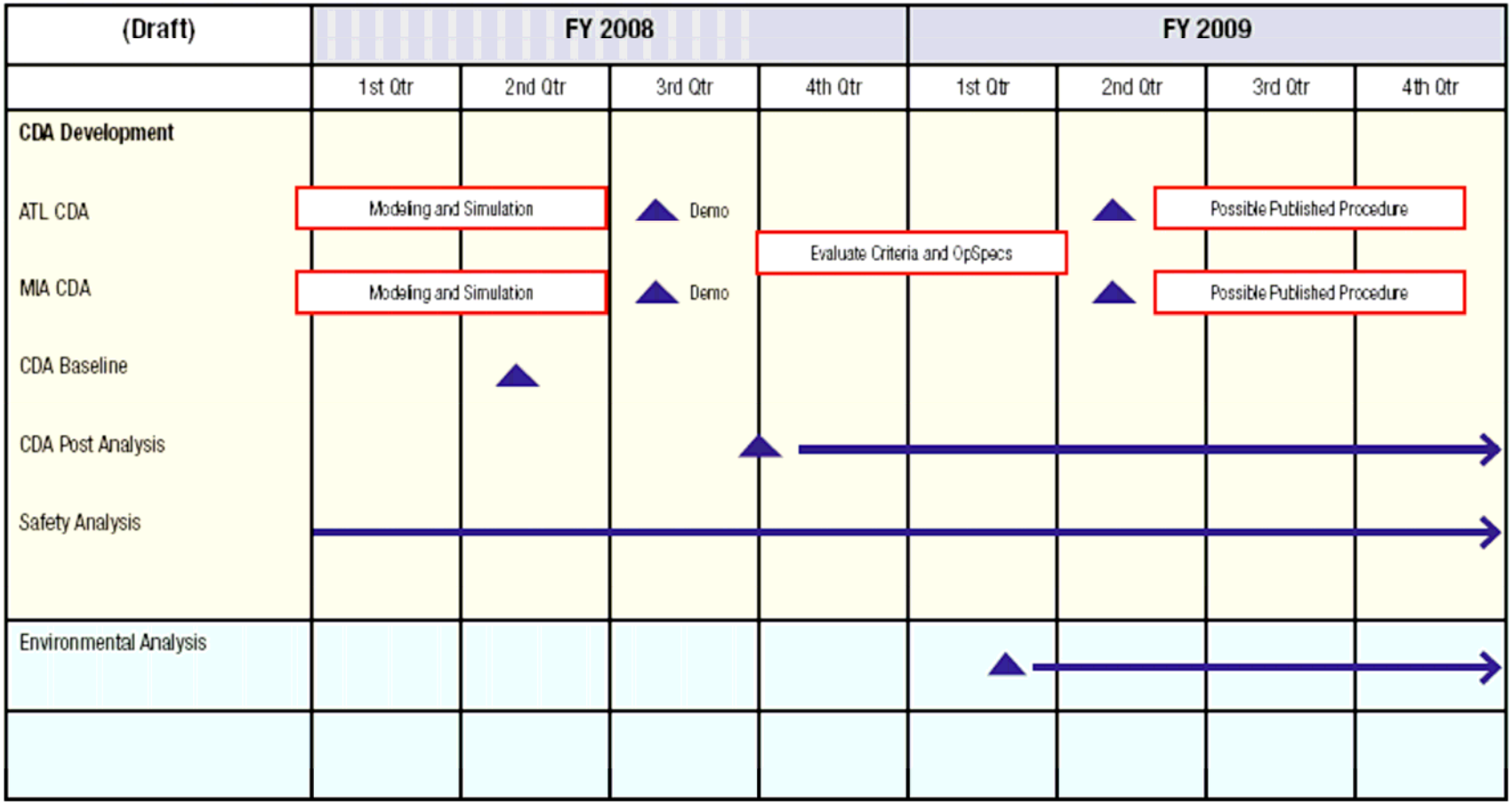
AIRE CDA Features

Key Features:

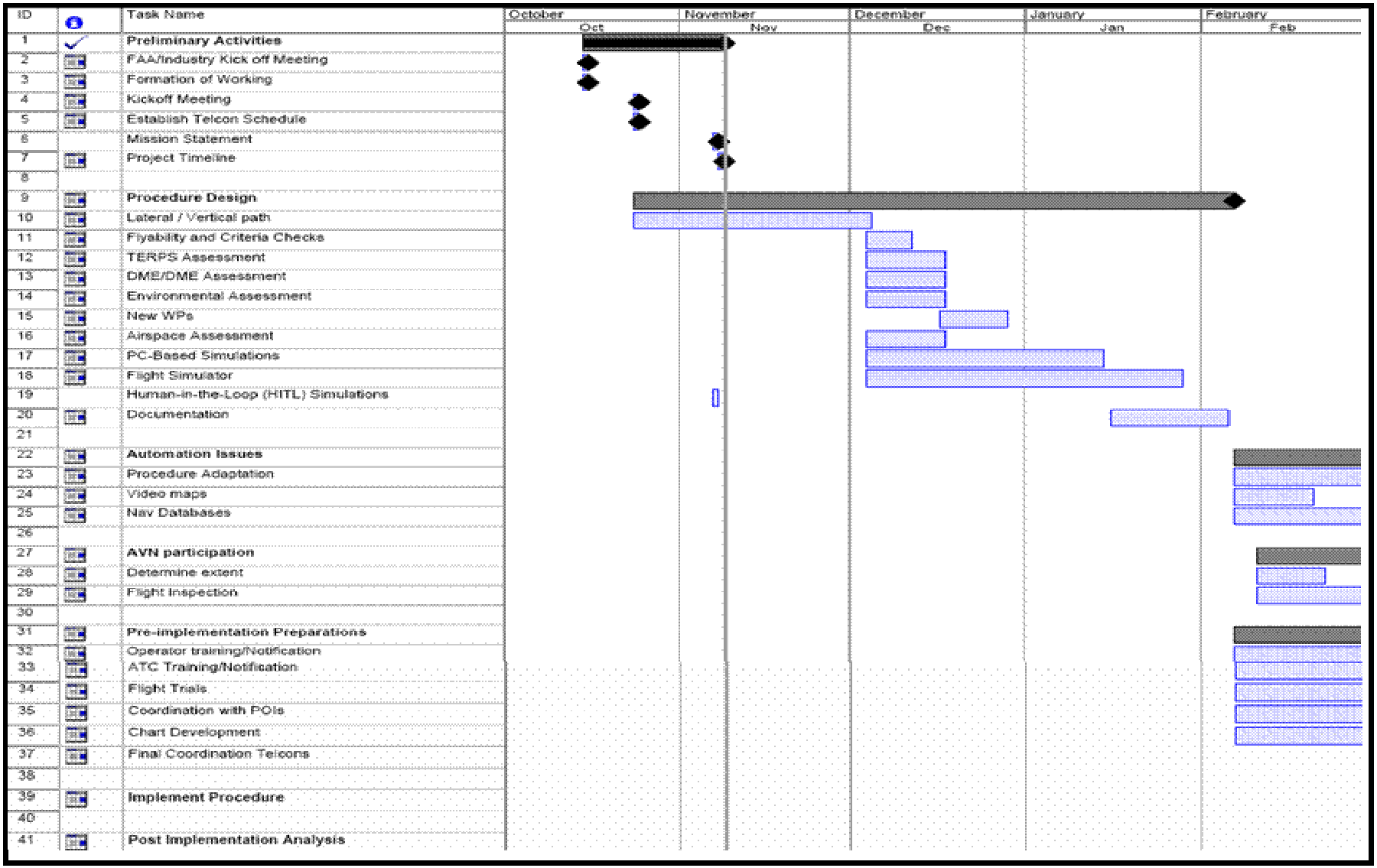
- **RNAV STAR**
  - Fixed lateral path
- **Optimized Vertical Profile**
  - Minimize level segments
  - Idle descent with minimal speed intervention
  - Uses existing Descend Via phraseology
- **Benefits**
  - Uses FMS capabilities to manage energy and reduce cockpit workload
  - Reduces pilot/controller communications
  - Fuel savings
  - Reduced noise
  - Reduced emissions
- **Inter-aircraft separations priority**
  - Evaluate metering scheme
  - Limit controller intervention below initiation altitude

AIRE CDA Schedule

CDA Schedule



FY ’08/09 Timeline – Continuous Descent Arrival Demo



AIRE CDA Milestones

- September 2007 – FAA/Industry AIRE CDA Kickoff Meeting - **Completed**
- October 2007 – Establish ATL and MIA CDA working groups - **Completed**
  - **Regular meetings commenced**
- November/December – Lateral and vertical path development - **In progress**
- February 2008 – Finalized CDA procedure designs
- March 2008 - Human In the Loop Simulations
- May 2008 – Baseline Airspace Evaluation Complete
- May 2008 – Begin CDA Demonstration Flights
- August 2008 – Post-Demonstration Benefits Assessment Report

QUESTIONS?